

REMARKS

This is a full and timely response to the outstanding Final Office Action mailed May 4, 2007. Upon entry of the amendments in this response, claims 1 – 20 remain pending. In particular, Applicants add claims 21 – 23, amend claims 1 and 18, and cancel claims 10 – 12 without prejudice, waiver, or disclaimer. Applicants cancel claims 10 – 12 merely to reduce the number of disputed issues and to facilitate early allowance and issuance of other claims in the present application. Applicants reserve the right to pursue the subject matter of these canceled claims in a continuing application, if Applicants so choose, and do not intend to dedicate the canceled subject matter to the public. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

I. Rejections Under 35 U.S.C. §102

A. Claim 1 is Allowable Over *Terry*

The Final Office Action indicates that claim 1 stands rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent Number 6,055,297 ("*Terry*"). Applicants respectfully traverse this rejection on the grounds that *Terry* does not disclose, teach, or suggest all of the claimed elements. More specifically, claim 1 recites:

1. A method for multiple inputs, multiple outputs (MIMO) power spectral density (PSD) allocation in a digital subscriber line (DSL) system, the method comprising:
monitoring system performance by performing a multi-ended line test (MELT);
processing the MELT; and
allocating PSD based on at least one of the following: ***system coupling power*** and ***system traffic***, the allocating PSD based on system coupling power comprising a ***full mask control scheme***.

(Emphasis Added)

Applicants respectfully submit that claim 1 is allowable over the cited art for at least the reason that *Terry* fails to disclose, teach, or suggest "allocating PSD based on at least one of the following: ***system coupling power*** and ***system traffic***, the allocating PSD based on

system coupling power comprising a **full mask control scheme**" as recited in claim 1, as amended. More specifically, *Terry* discloses "[t]he power spectra of signals supplied to the first and second ends of the line can be adjusted in dependence upon the power spectra of crosstalk monitored at the second and first ends, respectively, of the line" (col. 4, lines 2 – 6). Applicants respectfully submit that *Terry* makes no mention of "allocating PSD based on...**system traffic**" as recited in claim 1, as amended.

Further, *Terry* does not disclose "allocating PSD based on system coupling power... system coupling power comprising a **full mask control scheme**" as recited in claim 1, as amended. The Final Office Action alleges, in regards to dependent claims 10 – 12, that *Terry* teaches these limitations. Applicants respectfully disagree. *Terry* instead discloses "adjust[ing] the configuration of its transmitter in accordance with the PSD parameters provided" (col. 12, lines 47 – 49). Applicants respectfully submit that allocating PSD based on system coupling power that includes a full mask control scheme is different than adjusting a transmitter configuration in accordance with PSD parameters. For at least these reasons, Applicants submit that claim 1, as amended, is allowable.

B. Claims 2 – 9 are Allowable Over *Terry*

The Final Office Action indicates that claims 2 – 9 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent Number 6,055,297 ("*Terry*"). Applicants respectfully traverse this rejection on the grounds that *Terry* does not disclose, teach, or suggest all of the claimed elements. More specifically, dependent claims 2 – 9 are believed to be allowable for at least the reason that these claims depend from allowable independent claim 1. *In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc.*, 303 F.3d 1294, 1299 (Fed. Cir. 2002).

II. Rejections Under 35 U.S.C. §103

A. Claim 13 is Allowable Over *Terry* in view of *Ketchum*

The Final Office Action indicates that claim 13 stands rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,055,297 ("*Terry*") in view of U.S. Patent Number 7,116,725 ("*Ketchum*"). Applicants respectfully traverse this rejection for at least the reason that *Terry* in view of *Ketchum* fails to disclose, teach, or suggest all of the elements of claim 13. More specifically, claim 13 recites:

13. A system for dynamically monitoring and allocating upstream and downstream power spectral density (PSD) of a transceiver set, the system comprising:
- a monitor for performing multi-ended line tests (MELT);
 - a controller, responsive to the monitor, for performing multiple inputs, multiple outputs (MIMO) ***dynamic PSD allocation of upstream and downstream PSD***; and
 - a table of upstream PSD and downstream PSD for each time (t) and each line.

(*Emphasis Added*)

Applicants respectfully submit that claim 13 is allowable over the cited art for at least the reason that neither *Terry* nor *Ketchum* disclose, teach, or suggest a "system for dynamically monitoring and allocating upstream and downstream power spectral density (PSD) of a transceiver set, the system comprising... a controller, responsive to the monitor, for performing multiple inputs, multiple outputs (MIMO) ***dynamic PSD allocation of upstream and downstream PSD***" as recited in claim 13. More specifically, the Final Office Action admits "Terry did not suggest of performing multiple inputs, multiple outputs (MIMO) dynamic PSD allocation of upstream and downstream PSD" (page 3, paragraph 3). For at least this reason, claim 13 is allowable over the cited art.

Applicants further submit that *Ketchum* fails to overcome the deficiencies of *Terry*. More specifically, *Ketchum* appears to disclose "singular value decomposition and 'water-pouring results' to derive pulse-shaping and beam-steering solutions" (col. 2, lines 40 – 42) where "the downlink and uplink are allocated different frequency bands" (col. 9, lines 3 – 4). Applicants

respectfully submit that allocating "downlink and uplink" using different frequency bands is different than "**dynamic PSD allocation of downstream and upstream PSD**", as recited in claim 13. For at least this reason, Applicants respectfully request that the rejection of claim 13 be withdrawn.

B. Claim 16 is Allowable Over Terry in view of Ketchum

The Office Action indicates that claim 16 stands rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,055,297 ("*Terry*") in view of U.S. Patent Number 7,116,725 ("*Ketchum*"). Applicants respectfully traverse this rejection for at least the reason that *Terry* in view of *Ketchum* fails to disclose, teach, or suggest all of the elements of claim 16. More specifically, claim 16 recites:

16. A system for multiple inputs, multiple outputs (MIMO) dynamic monitoring and allocation of upstream and downstream power spectral density (PSD) of a transceiver set, the system comprising:
a monitor for performing multi-ended line tests (MELT) on components within the DSL system;
a controller, for performing MIMO **dynamic allocation of upstream and downstream PSD for the components within the DSL system**, wherein the controller is responsive to at least one of the monitor and a priori knowledge received from components within the DSL system; and
a table of upstream PSD and downstream PSD for each time (t) and each line.

(Emphasis Added)

Applicants respectfully submit that claim 16 is allowable over the cited art for at least the reason that neither *Terry* nor *Ketchum* disclose, teach, or suggest "**MIMO dynamic allocation of upstream and downstream PSD for the components within the DSL system**" as recited in claim 16. More specifically, the Final Office Action admits "*Terry* did not suggest of performing multiple inputs, multiple outputs (MIMO) dynamic PSD allocation of upstream and downstream PSD" (page 3, paragraph 3). For at least this reason, claim 1 is allowable over the cited art.

In addition, *Ketchum* fails to overcome the deficiencies of *Terry*. More specifically,

Ketchum appears to disclose "singular value decomposition and 'water-pouring results' to derive pulse-shaping and beam-steering solutions" (col. 2, lines 40 – 42) where "the downlink and uplink are allocated different frequency bands" (col. 9, lines 3 – 4). Applicants respectfully submit that allocating the "downlink and uplink" different frequency bands is different than "**dynamic allocation of upstream and downstream PSD for the components within the DSL system**" as recited in claim 16. Further, nowhere does *Ketchum* even suggest digital subscriber lines (DSL). For at least these reason, Applicants respectfully submit that claim 16 is allowable.

C. Claims 14 – 15 and 17 – 20 are Allowable Over Terry in view of Ketchum

The Final Office Action indicates that claims 14 – 15 and 17 – 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,055,297 ("*Terry*") in view of U.S. Patent Number 7,116,725 ("*Ketchum*"). Applicants respectfully traverse this rejection for at least the reason that *Terry* in view of *Ketchum* fails to disclose, teach, or suggest all of the elements of claims 14 – 15 and 17 – 20. More specifically, dependent claims 14 – 15 are believed to be allowable for at least the reason that these claims depend from allowable independent claim 13. Dependent claims 17 – 20 are believed to be allowable for at least the reason that these claims depend from allowable independent claim 16. *In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc.*, 303 F.3d 1294, 1299 (Fed. Cir. 2002).

III. Newly Added Claims

Applicants submit that new claims 21 – 23 are allowable over the cited references. More specifically, dependent claims 21 – 23 are allowable over the cited references for at least the reason that the cited references fail to disclose, suggest, or teach "allocation of PSD based upon system traffic." Claims 21 – 23 are allowable for at least the additional reason that these claims depend from allowable claim 1. See, e.g., *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

Therefore, Applicant requests the Examiner to enter and allow the above new claims.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested.

Any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and Official Notice, or statements interpreted similarly, should not be considered well-known for the particular and specific reasons that the claimed combinations are too complex to support such conclusions and because the Office Action does not include specific findings predicated on sound technical and scientific reasoning to support such conclusions.

If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,

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